

**REPORT OF THE UTILITIES DEPARTMENT  
OF  
THE PUBLIC SERVICE COMMISSION OF SOUTH CAROLINA**

**DOCKET NO. 2001-1-E  
CAROLINA POWER & LIGHT COMPANY**

**REPORT OF UTILITIES DEPARTMENT**  
**SOUTH CAROLINA PUBLIC SERVICE COMMISSION**

**DOCKET NO. 2001-1-E**

**CAROLINA POWER & LIGHT COMPANY**

**INDEX OF FUEL REPORT**

<b>Report of Fuel Adjustment Analysis-----</b>	<b>1 - 3</b>
<b>Exhibit No. 1      Power Plant Performance Data Report-----</b>	<b>4</b>
<b>Exhibit No. 2A     Nuclear Unit Outage Report-----</b>	<b>5</b>
<b>Exhibit No. 2B     Base Load Fossil Unit Outage Report-----</b>	<b>6</b>
<b>Exhibit No. 3      Generation Mix-----</b>	<b>7</b>
<b>Exhibit No. 4      Generation Statistics of Major Plants-----</b>	<b>8</b>
<b>Exhibit No. 5      Retail Comparison of MWH Sales-----</b>	<b>9</b>
<b>Exhibit No. 6      Retail Comparison of Fuel Costs-----</b>	<b>10</b>
<b>Exhibit No. 7      Retail Comparison of Fuel Costs (Graph)-----</b>	<b>11</b>
<b>Exhibit No. 8      Adjustment for Fuel Costs Rider-----</b>	<b>12</b>
<b>Exhibit No. 9      History of Cumulative Recovery Account-----</b>	<b>13</b>
<b>Exhibit No. 10     Projection of Cumulative Recovery Account</b>	
<b>Balance at various fuel factors for the period</b>	
<b>Ending March 2002-----</b>	<b>14</b>

# **REPORT OF UTILITIES DEPARTMENT**

## **SOUTH CAROLINA PUBLIC SERVICE COMMISSION**

**DOCKET NO. 2001-1-E**

### **CAROLINA POWER & LIGHT COMPANY REPORT OF FUEL ADJUSTMENT ANALYSIS**

#### **Scope of Examination**

The Commission's Utilities Department Staff analyzed the Company's procedures and practices pertaining to its fuel operation. Staff's examination consisted of the following:

- 1) Review of the Company's monthly fuel reports including:
  - a) Power Plant Performance Data Reports
  - b) Major Unit Outage Reports
  - c) Generation Mix
  - d) Generation Statistics
  - e) Retail Comparison of MWH Sales
  - f) Retail Comparison of Fuel Costs
- 2) Review of the Company's currently approved Adjustment for Fuel Costs Rider.
- 3) History of Cumulative Recovery Account.
- 4) Calculation of fuel costs to be included in the base rates for April 2001 through March 2002.

#### **REVIEW OF COMPANY'S MONTHLY FUEL REPORTS**

The Company files with this Commission monthly reports that include power plant performance data, major unit outages, generation mix, and other reports that provide the Staff pertinent data on which to evaluate the Company's fuel operating expenses.

Selected information from the Power Plant Performance Data Reports for nuclear and fossil plants is shown on Exhibit No. 1. It includes a listing of capacity factors and equivalent availability factors by major unit by month for the period, and also includes the yearly capacity factors (1998-2000) and the lifetime (cumulative) capacity factors for the nuclear units. These factors are expressed as a percentage. This percentage figure can be a useful index

when attempting to locate or identify a particular problem or unusual occurrence.

Pursuant to S.C. Code Ann. Section 58-27-865 (Supp. 1999) certain criteria are established for review of a utility's effort to minimize fuel expenses. In evaluating a utility's fuel costs under this section, it is necessary to examine and determine whether the utility has made every reasonable effort to minimize fuel costs associated with the operation of its nuclear generation system while "giving due regard to reliability of service, economical generation mix, generating experience of comparable facilities and minimization of the total cost of providing service."

The Nuclear Unit Outage Report considers each off-line outage experienced by unit, giving the inclusive dates of the outage, hours down, type of outage (Scheduled or Forced), the reason for the outage, and the corrective action taken. This information covers the period being considered in this proceeding and is shown in Exhibit No. 2A. Staff compiled this data through review of Company documents, NRC documents, and interviews with Company personnel. The Company's Nuclear Units performed very well during the period January 2000 through December 2000, accumulating an overall actual 96.5% capacity factor.

The Fossil Unit Outage Report is a listing of plants by unit, duration of outage (greater than 100 hours), reason for down time, and corrective action taken to return the unit to service. The information specifically reviewed for this proceeding is for the months of January 2000 through December 2000 and is included in Exhibit No. 2B. These Units' Availability Factors were in the 95 plus percentile for the greater portion of this period. The Company's base load fossil units achieved an equivalent availability of 92.4% for the period.

Staff reviewed and compiled a percentage Generation Mix statistic sheet for the Company's fossil, nuclear and hydraulic plants for January 2000 through December 2000. The fossil generation ranged from a high of 59% to a low of 51%. The nuclear generation ranged from a high of 49% to a low of 40%. The percentage of generation by hydro ranged from a high of 2% to a low of 0%. This information is included in Exhibit No. 3. The Staff also collected and reviewed certain Generation Statistics of Major Plants for the 12 months ending December 31, 2000. This data is presented in Exhibit No. 4. This Exhibit shows the Company's major plants by name, type of fuel used, fuel cost in cents per kilowatt-hour to operate and total megawatt-hours generated for the period. The nuclear fueled Harris Plant was lowest in cost at 0.45 cents per kilowatt-hour. The highest amount of generation of 14,755,063 megawatt-hours was produced at the Roxboro Station.

Utilities Department Exhibit No. 5 shows a comparison of the Company's original South Carolina retail megawatt-hour (MWH) estimated sales to the actual sales for the period from January 2000 through December 2000. The original projections ranged from an under-estimate of 11.69% in June 2000 to

an over-estimate of 8.79% in April 2000 with a total under-estimate of 0.87% for the period.

Utilities Department Exhibit No. 6 shows a comparison of the Company's original fuel cost projections to the costs actually experienced for the months of January 2000 through December 2000. The original projections ranged from an over-estimate of 1.43% for July 2000 to an under-estimate of 23.50% for December 2000. The difference between actual and original projection of these fuel costs is further delineated graphically on Utilities Department Exhibit No. 7.

#### **REVIEW OF THE COMPANY'S CURRENTLY APPROVED RETAIL ADJUSTMENT FOR FUEL COSTS**

Staff has reviewed the Company's currently approved Retail Adjustment for Fuel Costs Rider and found it to continue to operate properly. Therefore Staff does not recommend any modifications at this time. Exhibit No. 8 is a copy of the Company's currently approved Adjustment for Fuel Costs Rider.

#### **HISTORY OF THE CUMULATIVE RECOVERY ACCOUNT**

Exhibit No. 9 is a history of the cumulative recovery account balances from inception in 1979 to December 2000.

#### **CALCULATION OF BASE RATE FUEL COST COMPONENT FOR APRIL 2001 THROUGH MARCH 2002.**

Utilizing the currently projected sales and fuel cost figures for the period April 2001 through March 2002 and including the under-recovery balance of \$18,627,471 in the cumulative recovery account through December 2000 (See Audit Exhibit G), the average fuel expense is estimated to be 1.517 cents per kilowatt-hour. The under-recovery balance was reduced by \$4,448,330 to account for the amortization previously approved by Order No. 2000-0299 in Docket No. 2000-001-E dated March 31, 2000. Applying this fuel factor to the period would create an ending period estimated \$13,898 under-collection in the cumulative recovery account.

The Commission has consistently expressed its expectation that the Company exercise all reasonable prudence and efficiency in its fuel purchasing practices and aggressively control the operation and maintenance of its production facilities to assure the lowest fuel costs possible. Also, the Commission has directed the Staff to monitor the Company's plant operations and fuel purchasing to insure that any inefficient or negligent practice is brought to the Commission's attention.

Exhibit No. 10 is a table of Projections of the Cumulative Recovery Account for various fuel base levels for the twelve month period ending March 2002. Also indicated in the table are the projected results using the current fuel factor base component of 1.265 cents/kWh as well as the Company's proposed factor of 1.522 cents per kWh.

CAROLINA POWER & LIGHT COMPANY  
POWER PLANT PERFORMANCE DATA (%) REPORT

CAPACITY FACTOR	MW RATING	LIFE TIME	YEAR 1998	YEAR 1999	YEAR 2000	JAN 2000	FEB 2000	MAR 2000	APR 2000	MAY 2000	JUN 2000	JUL 2000	AUG 2000	SEP 2000	OCT 2000	NOV 2000	DEC 2000
BRUNSWICK 1	820	62.2	88.6	97.4	93.7	102.1	88.4	20.0	103.0	102.6	99.7	101.5	101.5	101.8	99.6	102.4	103.1
BRUNSWICK 2	811	59.9	98.0	85.8	99.0	102.3	100.4	101.4	102.4	99.7	100.8	100.1	100.9	73.9	102.1	102.5	101.5
HARRIS1	860	82.8	89.1	96.2	91.1	101.7	101.0	101.3	44.2	52.9	89.2	98.9	99.1	99.8	100.6	101.6	102.1
ROBINSON 2	683	71.1	92.0	95.0	104.0	106.4	107.0	104.8	103.6	104.5	95.6	102.3	102.4	103.6	104.7	105.9	106.7
TOTAL NUCLEAR	3174	67.6	91.9	93.6	96.5	103.0	98.9	81.1	87.1	88.8	96.2	100.6	100.9	94.5	101.6	103.0	103.2

AVAILABILITY FACTOR	MW RATING	YEAR 2000	JAN 2000	FEB 2000	MAR 2000	APR 2000	MAY 2000	JUN 2000	JUL 2000	AUG 2000	SEP 2000	OCT 2000	NOV 2000	DEC 2000
MAYO 1	745	96.4	99.4	95.5	95.3	97.1	83.2	90.2	99.6	96.3	100.0	100.0	100.0	100.0
ROXBORO 2	670	93.4	99.4	98.2	87.5	95.6	78.0	92.6	100.0	96.4	100.0	77.5	99.9	97.0
ROXBORO 3	707	93.6	100.0	92.4	86.4	83.0	97.9	99.8	96.5	93.3	97.4	87.3	89.6	98.9
ROXBORO 4	700	77.2	100.0	97.3	9.9	0.0	60.8	94.6	99.6	92.1	95.8	79.5	100.0	97.5
BRUNSWICK 1	820		99.4	86.3	19.9	100.0	100.0	97.9	100.0	100.0	100.0	97.1	98.5	100.0
BRUNSWICK 2	811		99.6	97.7	99.1	100.0	98.0	99.9	98.9	100.0	73.4	99.7	100.0	98.8
HARRIS 1	860		99.9	99.7	99.1	45.0	53.7	89.3	98.9	99.0	99.5	99.7	100.0	100.0
ROBINSON 2	683		99.5	100.0	98.7	97.9	100.0	93.1	100.0	100.0	99.9	99.6	100.0	100.0

DOCKET NO. 2001-1-E  
UTILITIES DEPARTMENT  
EXHIBIT NO. 1

CAROLINA POWER & LIGHT COMPANY  
NUCLEAR UNIT OUTAGE REPORT  
January 1, 2000 – December 31, 2000

<u>NO.</u>	<u>DATE OFF</u>	<u>DATE ON</u>	<u>HOURS/TYPE*</u>	<u>REASON FOR OUTAGE AND CORRECTIVE ACTION</u>
<u>BRUNSWICK UNIT 1</u>				
1.	02/26/00	03/24/00	661.80/S	Routine refueling and maintenance outage. Shortest R/O in plant history.
<u>BRUNSWICK UNIT 2</u>				
1.	09/22/00	09/29/00	168.20/F	Unit taken out of service due to failed power supply circuit breaker of the main transformer cooling system. This resulted in loss of transformer cooling (fans and oil pumps) and the generator lock-out and unit trip. Circuit breaker was replaced, one phase of the main power transformer replaced, and unit returned to service.
<u>HARRIS UNIT 1</u>				
1.	04/15/00	05/12/00	656.65/S	Routine refueling and maintenance outage.
2.	06/20/00	06/21/00	28.20/F	Unit was manually tripped due to low steam generator level. A component in a valve solenoid failed, causing the closing of the main feedwater isolation valve, which resulted in the low steam generator level. The failed component was repaired, and the unit was returned to service.
<u>ROBINSON UNIT 2</u>				
1.	06/21/00	06/22/00	33.17/S	Unit was manually taken out of service due to loss of hydraulic fluid in the electro-hydraulic control system. Repairs were made to the leaks, and the unit was returned to service.

TYPE\* F- Forced      S- Scheduled

DOCKET NO. 2001-1-E  
UTILITIES DEPARTMENT  
EXHIBIT NO. 2A  
PAGE 1 OF 1

**CAROLINA POWER & LIGHT COMPANY  
BASE LOAD FOSSIL UNIT OUTAGE REPORT  
(100 HRS OR GREATER DURATION)  
January 1, 2000 – December 31, 2000**

<u>MONTH</u>	<u>UNIT</u>	<u>HRS/TYPE*</u>	<u>REASON FOR OUTAGE AND CORRECTIVE ACTION</u>
JAN 00	None		
FEB 00	None		
MAR 00	Roxboro 4	670.42/S	Unit removed from service on March 4, for planned major turbine overhaul, boiler inspection and maintenance, and other corrective and preventative maintenance.
APR 00	Roxboro 4	719.00/S	Continued- See March.
MAY 00	Roxboro 4 Mayo 1 Roxboro 2	152.50/S 120.75/S 119.70/S	Continued- See March. Unit returned to service on May 7. Annual boiler inspection and overhaul. Boiler tube leak repairs performed.
JUN 00	Mayo 1	22.02/S	Continued- See May. Unit returned to service on June 1.
JUL 00	None		
AUG 00	None		
SEPT 00	None		
OCT 00	Roxboro 2 Roxboro 3	166.77/S 94.50/S	Annual boiler inspection/overhaul and planned and periodic maintenance. Annual boiler inspection/overhaul and planned and periodic maintenance.
NOV 00	Roxboro 3	60.33/S	Continued- See October. Unit returned to service on November 3.
DEC 00	None		

**TYPE\* F – Forced S – Scheduled**



CAROLINA POWER & LIGHT COMPANY

GENERATION MIX

JANUARY 1, 2000 - DECEMBER 31, 2000

2000 MONTH	FOSSIL %	NUCLEAR %	HYDRO %
JANUARY	56	43	1
FEBRUARY	55	43	2
MARCH	58	41	1
APRIL	53	45	2
MAY	56	43	1
JUNE	59	40	1
JULY	57	42	1
AUGUST	57	42	1
SEPTEMBER	55	44	1
OCTOBER	51	49	0
NOVEMBER	54	45	1
DECEMBER	59	41	0

# **CAROLINA POWER & LIGHT COMPANY**

## **GENERATION STATISTICS OF MAJOR PLANTS**

**JANUARY 1, 2000 - DECEMBER 31, 2000**

PLANT	TYPE FUEL	AVERAGE FUEL COST (CENTS/KWH*)	GENERATION (MWH)
Harris	Nuclear	0.45	6,877,960
Robinson 2	Nuclear	0.46	6,237,077
Brunswick 1	Nuclear	0.49	6,746,479
Brunswick 2	Nuclear	0.49	7,055,053
Robinson 1	Coal	1.68	1,019,141
Weatherspoon	Coal	2.17	828,341
Asheville	Coal	1.59	2,560,842
Roxboro	Coal	1.60	14,755,063
Sutton	Coal	2.01	2,596,831
Cape Fear	Coal	1.63	1,834,170
Mayo	Coal	1.68	4,017,295
Lee	Coal	1.96	1,908,758

(\*) The average fuel costs for coal-fired plants include oil cost for start-up and flame stabilization.

**CAROLINA POWER & LIGHT COMPANY**  
**SOUTH CAROLINA RETAIL COMPARISON OF ESTIMATED TO ACTUAL ENERGY SALES FOR 2000**

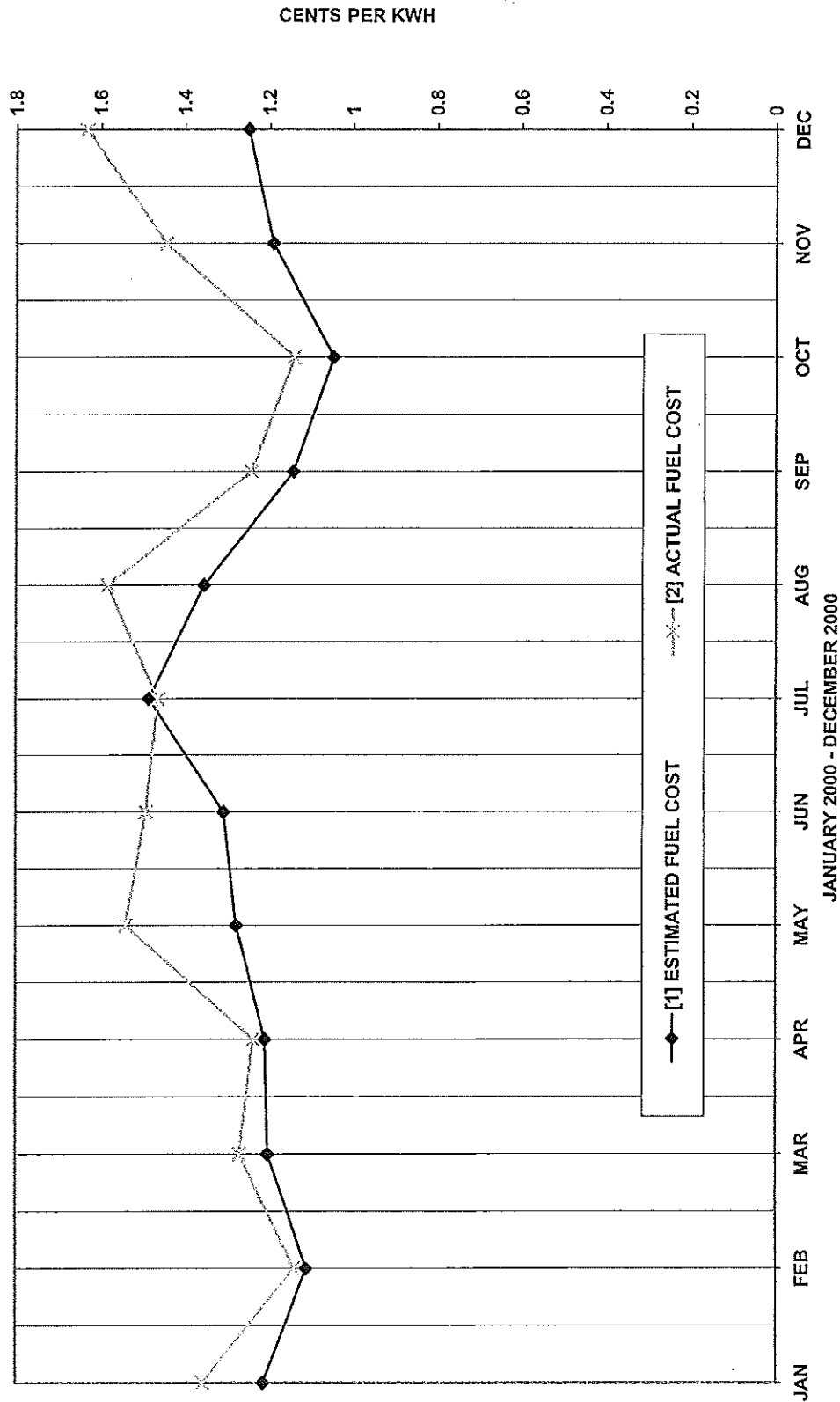
	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>TOTAL</u>
[1] ESTIMATED SALES [MWH]	645,517	568,995	542,020	549,985	561,111	565,897	670,471	629,660	699,872	507,792	542,393	601,868	7,085,581
[2] ACTUAL SALES [MWH]	647,156	577,421	556,543	505,552	543,867	640,837	666,276	681,117	644,829	568,941	513,327	601,736	7,147,602
[3] AMOUNT DIFFERENCE [1]-[2]	-1,639	-8,426	-14,523	44,433	17,244	-74,940	4,195	-51,457	55,043	-61,149	29,066	132	-62,021
[4] PERCENT DIFFERENCE [3]/[2]	-0.25%	-1.46%	-2.61%	8.79%	3.17%	-11.69%	0.63%	-7.55%	8.54%	-10.75%	5.66%	0.02%	-0.87%

DOCKET NO. 2001-1-E  
 UTILITIES DEPARTMENT  
 EXHIBIT NO. 5

CAROLINA POWER & LIGHT COMPANY  
SOUTH CAROLINA RETAIL COMPARISON OF ESTIMATED TO ACTUAL FUEL COST FOR 2000

	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
[1] ESTIMATED FUEL COST PROJECTION	0.01212	0.01108	0.01201	0.01208	0.01277	0.01307	0.01485	0.01354	0.01142	0.01046	0.01191	0.01250
[2] ACTUAL FUEL COST EXPERIENCE	0.01357	0.01138	0.01269	0.01236	0.01539	0.01492	0.01464	0.01583	0.01242	0.01141	0.01445	0.01634
[3] AMOUNT IN BASE	0.01122	0.01122	0.01122	0.01122	0.01265	0.01265	0.01265	0.01265	0.01265	0.01265	0.01265	0.01265
[4] VARIANCE FROM ACTUAL [1-2]/[2]	-10.69%	-2.64%	-5.36%	-2.27%	-17.02%	-12.40%	1.43%	-14.47%	-8.05%	-8.33%	-17.58%	-23.50%

CAROLINA POWER & LIGHT COMPANY  
 ESTIMATED TO ACTUAL FUEL COST



RIDER NO. 39S  
ADJUSTMENT FOR FUEL COSTS

APPLICABILITY

This adjustment is applicable to and is a part of the Utility's South Carolina retail electric rate schedules.

The Public Service Commission has determined that the costs of fuel in an amount to the nearest one-thousandth of a cent, as determined by the following formula, will be included in the base rates to the extent determined reasonable and proper by the Commission:

$$F = \frac{E}{S} + \frac{G}{S_1}$$

Where:

F = Fuel cost per kilowatt-hour included in base rate, rounded to the nearest one-thousandth of a cent.

E = Total projected system fuel costs:

- (A) Fuel consumed in the Utility's own plants and the Utility's share of fuel consumed in jointly owned or leased plants. The cost of fossil fuel shall include no items other than those listed in Account 151 of the Commission's Uniform System of Accounts for Public Utilities and Licensees and the cost of SO<sub>2</sub> emission allowances recorded in FERC Account 509 (allowance cost). The cost of nuclear fuel shall be that as shown in Account 518 excluding rental payments on leased nuclear fuel and except that, if Account 518 also contains any expense for fossil fuel which has already been included in the cost of fossil fuel, it shall be deducted from this account.

Plus

- (B) Purchased power fuel costs and allowance costs such as those incurred in unit power and Limited Term power purchases where the fuel costs and applicable allowance cost associated with energy purchased are identifiable and are identified in the billing statement.

Plus

- (C) Interchange power fuel costs and applicable allowance cost such as Short Term, Economy, and other where the energy is purchased on economic dispatch basis.

Energy receipts that do not involve money payments such as Diversity energy and payback of storage energy are not defined as purchased or interchange power relative to this fuel calculation.

Minus

- (D) The cost of fuel and applicable allowance cost recovered through intersystem sales including the fuel costs and applicable allowance cost related to economy energy sales and other energy sold on an economic dispatch basis. Energy deliveries that do not involve billing transactions such as Diversity energy and payback of storage are not defined as sales relative to this fuel calculation.

S = Projected system kilowatt-hour sales excluding any intersystem sales.

G = Cumulative difference between jurisdictional fuel revenues billed and fuel expenses at the end of the month preceding the projected period utilized in E and S.

S<sub>1</sub> = Projected jurisdictional kilowatt-hour sales for the period covered by the fuel costs included in E.

The appropriate revenue-related tax factor is to be included in these calculations.

The fuel cost (F) as determined by Public Service Commission of South Carolina is 1.265 cents per kilowatt-hour, which shall remain in effect until superseded by a subsequent Commission order.

Supersedes Rider No. 39R

Effective for bills rendered on and after April 1, 2000

# CAROLINA POWER & LIGHT COMPANY

## HISTORY OF CUMULATIVE RECOVERY ACCOUNT

<u>PERIOD ENDING</u>	<u>OVER (UNDER) \$</u>
March 1979 – Automatic Fuel Adjustment in Effect	
December 1979	1,104,730
September 1980	(12,000,131)
March 1981	( 4,060,364)
August 1981	(12,113,832)
March 1982	( 935,412)
September 1982	( 6,881,796)
March 1983	( 2,259,114)
September 1983	( 3,264,694)
March 1984	109,270
September 1984	2,172,859
March 1985	( 2,317,008)
September 1985	745,913
March 1986	1,972,280
September 1986	( 696,805)
March 1987	2,408,354
September 1987	3,310,059
March 1988	( 3,964,888)
September 1988	( 5,737,541)
March 1989	( 8,125,496)
September 1989	( 5,875,641)
March 1990	( 9,311,149)
September 1990	( 658,614)
March 1991	1,403,023
September 1991	4,661,988
March 1992	5,201,112
September 1992	( 6,712,920)
March 1993	( 9,563,180)
September 1993	0*
March 1994	( 1,010,684)
September 1994	1,975,939
March 1995	7,408,161
September 1995	2,011,489
December 1996	186,139
December 1997	( 6,212,396)
December 1998	(14,334,022)
December 1999	(17,967,157)**
December 2000	(18,627,471)

\*Eliminated \$14,011,263 per Commission Order No. 93-865

\*\*Reduced by \$6,500,000 per Commission Order No. 1999-324

**CAROLINA POWER & LIGHT COMPANY**  
**PROJECTIONS OF THE CUMULATIVE RECOVERY ACCOUNT**  
**FOR THE TWELVE MONTH PERIOD ENDING**  
**MARCH 2002**

	FUEL BASE	PROJECTED CUMULATIVE OVER/(UNDER) RECOVERY (\$)
	1.200	(23,557,957)
CURRENT FACTOR	1.265	(18,730,311)
	1.300	(16,130,809)
	1.350	(12,417,235)
	1.400	(8,703,661)
	1.450	(4,990,087)
	1.500	(1,276,513)
	1.515	(162,441)
	1.516	(88,169)
ZERO UNDER	1.517	(13,898)
ZERO OVER	1.518	60,374
	1.519	134,645
	1.520	208,917
CP&L PROPOSED	1.522	357,460
	1.525	580,274
	1.550	2,437,061
	1.575	4,293,848
	1.600	6,150,635
	1.650	9,864,209
	1.700	13,577,783